

Enhancing the natural capital for food and water needs

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- **Objective** – Conservation and sustainable use of wetland biodiversity in Lower Mekong Basin
- **Principle** - No conservation of wetland biodiversity without addressing livelihoods and poverty issues
- Use of the **Ecosystem Approach** in design and implementation



Millenium Ecosystem Assessment

- “Effective management of inland wetlands will require improved river basin-scale management – ecosystem approaches – including IRBM, IWRM, ICZM. Ietc.
- Not integration by itself, but by adopting an incremental approach, addressing issues and building capacity
- Conceptual framework of the Millenium Assessment for ecosystems and human well-being – Ecosystem Approaches



Wetland Ecosystem Services

| Provisioning | Regulating |
|-------------------------------------|-----------------------------|
| – Food | – Climate regulation |
| – Freshwater | – Water regulation |
| – Fibre and fuel | – Water purification |
| – Biochemical and genetic materials | – Natural hazard regulation |
| Cultural | – Erosion regulation |
| – Spiritual and inspirational | – Pollination |
| – Recreational | Supporting |
| – Aesthetic | – Soil formation |
| – Educational | – Nutrient cycling |



Trade-offs and Scenarios

- Major policy decisions in the next decades will have to address trade-offs between
 - Agricultural production and water quality,
 - Land use and biodiversity,
 - Water use and aquatic biodiversity,
 - Current water use for irrigation and future agricultural production
- Under MA scenarios for the future, resource management decisions give highest priority for **provisioning services** – food and water - and this may tend to lead towards reducing **regulating, cultural and supporting services**



What is the Ecosystem Approach?

- Accepted by the Convention on Biological Diversity
- 12 principles
- 5 steps
 - Defining the area and stakeholders
 - Looking at the structures and functions of the ecosystems and institutions for management
 - Economic and other incentives – market distortion and internalised costs and benefits
 - Adaptive management - up-scaling the approach
 - Taking account of long-time scales – accepting that change is inevitable



Environment in IWRM

- **Issue:** environment in IWRM is usually seen in terms of mitigating the impacts of development without questioning the nature of this ‘development’
- Environment is seen as a sector – alongside other uses of water resources
- But environment is both a sector that has water needs like other sectors, but is also the source and quality controller of water
- Environmental needs for water are significantly different from other water needs
- But how to do this institutionally?



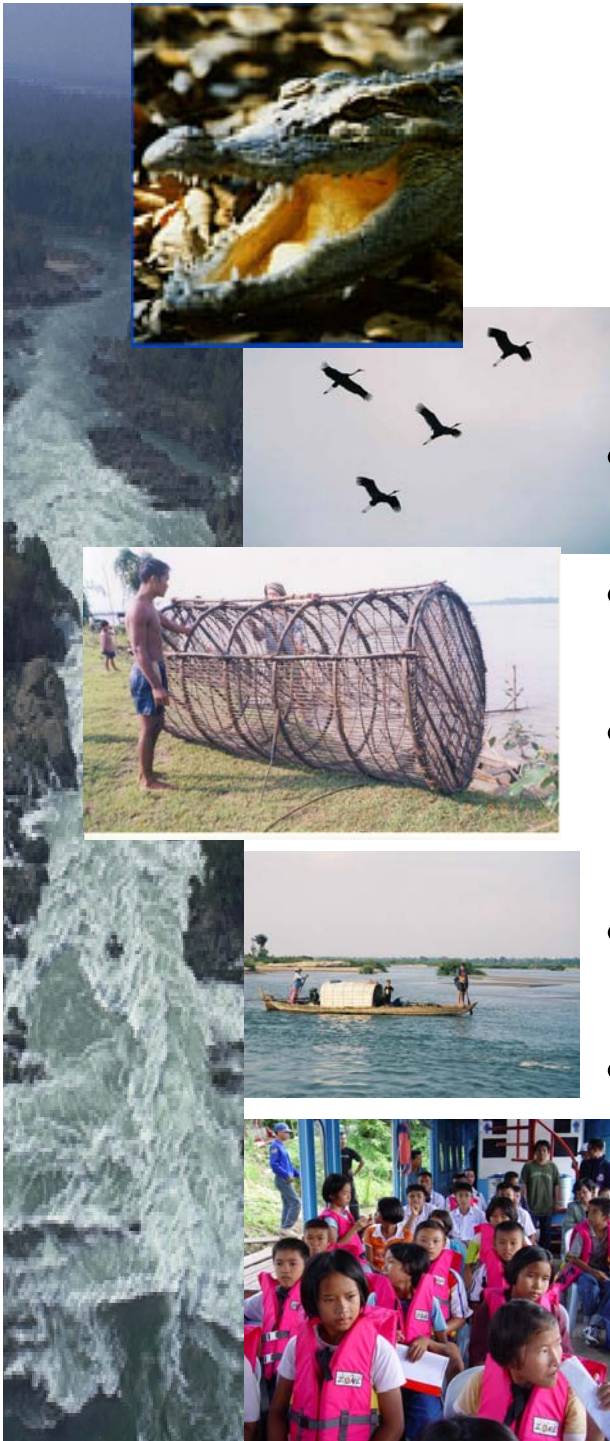
What type of development?

- Zero development is not an option
- Mekong has plenty of water and quality still in good shape,
- Careful, pro-poor development?
- What development? Whose development? Who chooses?
- Poor and unsustainable development choices have led to social and environmental costs
- If ecosystem is undermined our future ability to deliver development is undermined
- Wetlands and agriculture not as a poverty “trap” but as a viable livelihood alternative



Enhancing ecosystems as a development option

- Especially in water resources –managing river basins, wetlands and watersheds
- MDG targets on water, health and food security need to be achieved –
- Must not focus just on the delivery of water in pumps and pipes, without adequately managing the ecosystems that produce the water
- Not merely managing these ecosystems to prevent further degradation
- **Manage ecosystems to enhance ecosystems to increase productivity, but balance productivity with sustainability and equity**





Fishing Gears



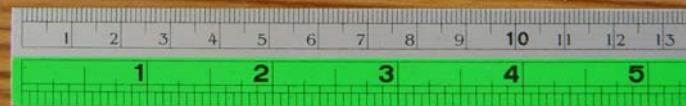
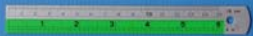
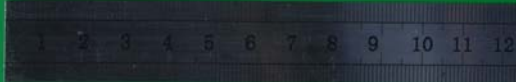
• Identified > 70 type used
In Songkhram ,in different season



Fish photo



- Identify 130 species
- Taken Photo 70 species



Threats to Fisheries?

- LMB has perhaps the most productive freshwater fishery in the world
- Fisheries constitute the major source of protein in rural diets in the LMB – not just fish
- Most of these resources are from common property resources, and are of particular importance to poor people
- Major threats to productivity and sustainability of fisheries come from the combination of environmental change –
 - changes to hydrological regime,
 - loss of wetland habitats,
 - barriers to migration
 - over extraction, particularly of juveniles
- Are Environmental changes inevitable?
- Is loss to the fisheries inevitable – can it be mitigated





Is aquaculture the answer?

- Aquaculture plays an important role – small-scale and commercial
- And is often presented as the means of mitigating any loss to the wild fishery
- We can certainly expect aquaculture to continue to play an important role and there is considerable effort directed at increasing aquaculture production

But

- Aquaculture in Mekong constitutes 10% of total production, and capture fisheries 90%
- Investments in research, extension for 10% increase in aquaculture production
- But a 10% increase in capture fisheries production would amount to almost the total aquaculture production
- **Perhaps the wild fishery enhancement should attract as much attention as aquaculture**



Enhancing the environment for fisheries

- Mekong fisheries are resilient
- Capture fisheries can be maintained or rehabilitated, and production **increased** by
 - improving fish habitats,
 - improving floodplain connectivity, and
 - maintaining natural flows
- The choice is not simply
 - zero development or
 - development and mitigation
- The alternative of enhancing the environment and natural resources should be considered



In summary

- Ecosystem approaches, including IWRM, are essential for ensuring environment is adequately considered
- Environment is more than just another water sector,
- Manage ecosystems to enhance ecosystems to increase productivity, balanced with sustainability and equity
- Wild fishery enhancement should attract as much attention as aquaculture development
- The development alternative of enhancing the environment and natural resource productivity should be considered



THANK YOU

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